

REMARKS

Claims 11-15 are in the Present Application.

Claim 11 has been amended to recite a vessel configured to hold seed crystal therein, below a precursor charge or melt thereon, to achieve bottom seeded crystal growth. That is, the above vehicle structure is described outside of the preamble of claim 11 so as to recite a distinctive patentable structure as further discussed below.

The Office Action rejection of claims 11-13 as unpatentable under 35 U.S.C. 103(a) over Tomzig et al. ('170), in view of Linares ('304), is respectfully traversed.

As noted in the Office Action, Tomzig et al. does not teach an inner elongated electrode and an outer electrode of graphite and means for applying a voltage across the space between electrodes (*radially*).

However, the Examiner finds an electrode 20 in the Linares ('304) reference, that is electrically connected and applying a voltage between cathode and anode.

The Office Action goes on to say that it would have been obvious, at the time of the invention, to modify Tomzig by incorporating anode and cathode electrodes, as taught by Linares... and then concludes, in a later paragraph, by saying that the combination of Tomzig and Linares teaches an induction coil for applying a magnetic field and a voltage means and thus is capable of the intended use of providing magnetic field lines across radial electric current to impart a stirring force.

However, that is not what the proposed combination of the two references would achieve. That is, referring to Figures 1 & 2 of Linares, the vertical electrode 20 and the connector 18, noted in column 5, lines 12-17, of Linares, provides for a vertical electric field flowing between anode 20 & connector 18 and not a radial electric field which flows orthogonal to such anode & connector, which is capable of crossing magnetic field lines to impart a stirring force to the melt.

That is, if one combine the Linares electrode 20 with its vertical electric field, with the apparatus of Tomzig, with its vertical magnetic field, nothing happens, i.e.

no stirring can occur because a radial electric field is required in a vertical magnetic field to achieve a stirring means which is provided, not by the proposed combination but by the apparatus of applicants' claims 11 et seq.

Accordingly, applicants' invention, per claim 11, as amended, provides two distinct structural features over the proposed prior art combination, 1) each of the prior art references disclose an apparatus for top seeding for crystal growth as opposed to applicants' bottom-seeded apparatus per claim 11 and 2) the proposed combination of the two references fails to provide a stirring means, while applicants' invention does so, per claim 11, as amended per the recitation in paragraphs g), h), and i) of providing a radial electric field which crosses magnetic field lines in the melt such that a stirring force is imparted thereto. That is, applicants claimed apparatus provides a stirring means for the melt unlike the proposed combination and without the intrusion of a mechanical stirring means.

Referring to page 4 of the Office Action, last paragraph, it is noted that it is the "bottom seeded crystal growth" limitation has been moved out of the preamble of applicants' claim 11 and into the body of the claim to accordingly limit same.

Also claims 12 & 13 are believed novel over the applied references, in view of their dependence from claim 11, as amended, which is believed novel thereover, as discussed above.

It is noted also that claims 14 & 15 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten.... However, in view of the above amendments to claim 11, which are believed to bring further clarity thereto, along with the narrowing of the scope thereof and in view of the above review of the limitations of the combined prior art references, that amended claim 11 may now be in condition for allowance over the applied art so as to impart novelty to its dependent claims 12-15 and obviate the need to rewrite claims 14 & 15.

Finally, it is reiterated that applicants' above claims, including 11, as amended, recite in ¶ (h) *"means for applying voltage to said coil to impose magnetic field lines in said melt such that the flow of said radial electrical current crosses said*

magnetic field lines to impart a stirring force to said melt ...", which means is not suggested nor possible by a combination of the above two cited references. And as this means does the same work as would mechanical stirring means, it is the equivalent of a structural component and not a mere intended use.

In view of the foregoing, the claims of record, as amended, are believed distinguished over the applied art and in condition for allowance.

Respectfully submitted,



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